

Saysongkham Sayavong 2012: Land Use Planning for Efficient Agricultural Uses in Viengphoukha District Luangnamtha Province, Lao People's Democratic Republic. Master of Science (Soil Science and Management Technology), Major Field: Soil Science and Management Technology, Department of Soil Science. Thesis Advisor: Associate Professor Kumut Sangkhasila, Ph.D. 148 pages.

The objectives of this research studied land class evaluation using both soil resource information and economic data for 6 field crops production, namely paddy rice, maize, cassava, sugarcane, pineapple and rubber in Viengphoukha District, Luangnamtha Province, Lao PDR. Classification methodology was followed by FAO framework (FAO, 1984). Physical land evaluation required data including 1) soil resource data, 2) soil drainage, 3) present land use, 4) forest categories, 5) climatic conditions, 6) slopping land conditions and 7) soil erosion classes. Economic data were collected from local farmers, included income, variable cost, net return over variable cost, and rate of net return. Geographic Information System (GIS) was used to this evaluation.

Results showed that paddy rice were the moderately and marginally suitability classes covered 0.37 and 60.71 percent of the total area. Maize showed that the highly, moderately and marginally suitability classes were 2.97, 22.48 and 66.80 percent of total area. Cassava were the moderately and marginally suitability classes covered 5.65 and 78.41 percent of the total area. Sugarcane plantation presented the moderately and marginally suitability classes covered 12.68 and 77.00 percent of total area. Pineapple could be able to the highly, moderately and marginally suitability classes were 0.29, 22.49 and 69.66 percent of the total area. Rubber plantation showed the highly, moderately and marginally suitability classes were 2.90, 17.36 and 75.82 percent of the total area. Land suitability for paddy rice, maize, cassava, sugarcane, pineapple and rubber excluding forest areas conserving for biodiversity and natural environment quality that the suitable land use areas covered 0.19, 14.33, 3.93, 8.11, 13.10 and 11.58 percent of the total area, respectively.

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Thesis Advisor's signature